

REMARKS

The Official Action dated May 7, 2003 has been carefully considered. The following remarks are believed sufficient to place the present application in condition for allowance. Reconsideration is respectfully requested.

35 U.S.C. § 103

Claims 12-20 are rejected under 35 USC 103(a) as being unpatentable over U.S. Patent No. 5,698,505 to Ofosu-Asante (Ofosu) in view of PCT Int'l Pub. No. WO 95/00117 to Surutzidis et al. (Surutzidis). Specifically the Examiner asserts that Ofosu teaches light duty liquid or gel dishwashing detergent compositions comprising detergent surfactants and high amounts of long chain amine oxide, with one "preferred" embodiment containing suds boosters and divalent ions. The Examiner further asserts that the Ofosu surfactants are present in amounts from 5% to about 99% and include anionic surfactants such as alkyl ether sulfates derived from ethoxylating an alcohol having 8 to 22 carbon atoms and having from 1 to 30 ethoxylate groups. The Examiner further maintains that Ofosu teaches amine oxides present in amounts from about 8% to about 30% by weight and that the presence of magnesium ions is taught to improve the cleaning of greasy soils for various compositions and that the ions are present at a level of from about .1% to 4% by weight. The Examiner asserts that Surutzidis teaches the equivalence of primary and branched chain AAS surfactants in a similar detergent composition, such that it would be obvious to one of ordinary skill in the art to use a branched AAS surfactant in the compositions of Ofosu. The Examiner asserts that Ofosu does not specifically teach, but does suggest, the use of branched alkyl alkoxy sulfate (hereafter "AAS"), and a cleaning composition containing a

branched AAS, an amine oxide, water, magnesium ions or other components in the specific instantly recited proportions.

This rejection is traversed and reconsideration is respectfully requested. The present invention, as defined broadly by independent claim 12, is directed to an aqueous liquid detergent composition comprising from about 30% to 70% water by weight, from 0.1% to 2% magnesium ions by weight, and a surfactant mixture. The surfactant mixture comprises: a) an AAS surfactant of the formula $R_1O(A)_xSO_3M$, where R_1 is an alkyl or alkenyl group having 9 to 16 carbon atoms, A is an alkoxy group, x represents 0.5 to 3 in average, and M is a member selected from the group consisting of alkali metals, alkali earth metals, ammonium and alkanolammonium, and b) 0.5% to 10% of an amine oxide surfactant. From 20% to 60% by weight of the total AAS comprises an alkyl alkoxy sulfate wherein R_1 is branched such that the composition provides sudsing.

Ofosu, on the other hand, teaches compositions comprising, *inter alia*, non-specific anionic alkyl sulfates, including AAS's. Applicants have never asserted that the novelty of their invention stems from the mere inclusion of alkyl alkoxy sulfate surfactants in their inventive compositions. These anionic surfactants are well-known in the detergent arts. Rather, Applicants submit that their discovery that formulations mandating specific proportions of branched and unbranched AAS's provides a means of stabilizing the compositions at low temperatures, a means that was heretofore unknown. Ofosu, in fact, addresses the temperature-based stabilization issues by suggesting particular alkylpolyethoxypolycarboxylate-containing compositions, balanced for degrees of carboxylation and ethoxylation to yield a desired hydrophilicity range that confers the desired stability (see, e.g., Col. 18, lines 3-8.) Other than their typical inclusion as a preferred anionic surfactant, Ofosu does not teach or otherwise suggest the importance or

effect of controlling the total AAS structural characteristic profile in order to confer the desired low temperature stability. Applicants submit that the rejection overlooks both the existence and significance of the proportion limitation.

The broad teachings of a reference cannot preclude establishment of unobviousness for a specifically claimed invention not anticipated by the reference. *In re Orfeo*, 169 USPQ 487 (CCPA 1971). *In re Waymouth*, 182 USPQ 290 (CCPA 1974). *In re Meyer*, 202 USPQ 175 (CCPA 1979). Applicants submit that the broad disclosure of Ofosu of the genus of AAS's for typical use as anionic surfactants, does not render the presently claimed specific proportions of linear and branched AAS's obvious. Applicants also submit that the empirical evidence they have submitted, i.e. the clarity of the inventive compositions based on this proportion, distinguishes their invention over Ofosu. (See application specification at pages 14 and 15).

Further, Applicants note that Surutzidis does not, as asserted by the Examiner, teach the "equivalence" of branched and unbranched AAS's. To the contrary, Surutzidis recognizes the differences in functional efficacy that result from switching between linear and branched molecules. In fact, at page 2, paragraph 1, Surutzidis teaches that "another advantage of the present invention is that the sudsing is reduced by the *adaptation of straight chain anionic surfactants to their branched counterparts*." In addition, Applicants point to examples A-E at page 11 of Surutzidis and note that the alkyl sulfate and AAS ingredients are designated as being either branched or linear, and, significantly, not a single example includes both branched and linear AAS's. The particularity with regard to inclusion of linear or branched structures implies distinction, not equivalence.

Absolute equivalence between linear and branched architectures for any organic molecule does not exist. It can only be a fair statement if made in the context of specific

intended functions. The function of the AAS ingredient in Surutzidis is as an adjunct suds suppressing agent. However, the function of the AAS ingredient in the instant compositions is to address the well-known low temperature instability of high-sudsing liquid detergents. The difference between the linear and branched architecture of the AAS with respect to this purpose goes to the very heart of the instant invention, i.e., Applicants have discovered that certain architectural proportions confer a stability heretofore unrecognized in the art. Far from defeating patentability, the failure of Surutzidis to recognize any difference in efficacy among the AAS's with respect to stability highlights the patentable novelty of the present inventive compositions over Surutzidis.

Significantly, the Applicants submit that not only is the combination of Ofosu and Surutzidis nonobvious because they are directed to dissimilar functions, but the combination itself fails to yield the instant inventive compositions, i.e. the combination fails to teach or suggest all the requisite ingredients of the present inventive compositions. Applicants note that Surutzidis fail to teach or suggest, in the specification or examples, any compositions which comprise both branched and linear AAS's. The present inventive compositions, on the other hand, require that the branched AAS comprise only 20-60% of the total AAS, while the Surutzidis teachings and examples comprise one or the other. The present compositions require *both* linear and branched AAS's in specified proportions.

To establish prima facie obviousness of the claimed invention, all the claim limitations must be taught or suggested by the prior art, *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974). It is error to find obviousness where references diverge from and teach away from the invention at hand. *In re Fine*, 5 U.S.P.Q.2d 1596, 1599 (Fed. Cir. 1988). Since the references fail to provide a suggestion to combine their respective elements along the lines of the present invention, and because there is no inherent motivation to make

such a combination, and, further, irrespective of this, the references, alone or in combination, fail to disclose an important requisite element of the present inventive compositions, the present invention is not rendered obvious by Ofosu in view of Surutzidis. Hence, the rejection of claims 12-20 under 35 USC 103(a) is overcome. Reconsideration is respectfully requested.

Claims 12-20 are further rejected under 35 U.S.C. 103(a) as being unpatentable over Surutzidis in view of Ofosu. The Examiner asserts that Surutzidis teaches liquid detergent compositions containing branched anionic surfactants, which are low-sudsing. The Examiner further asserts that the Surutzidis compositions comprise a "Guerbet anionic surfactant", which is "low in sudsing due to branching," and is present at levels from 1 to 70% by weight of the total detergent. Moreover, the Examiner asserts that Surutzidis specifically teaches the use of a branched C₁₂-C₁₅ alkyl 3EO sulfate, available under the tradename LIAL C₁₂-C₁₅, and that the detergent compositions may also contain non-Guerbet anionic surfactants in amounts from 1% to 40% by weight, including alkyl alkoxylated sulfate surfactants containing a metal cation such as magnesium. Ofosu is relied upon as set forth above. The Examiner concludes that it would have been obvious to one of ordinary skill in the art to use the magnesium ions of Ofosu in the compositions of Surutzidis because Ofosu teaches the advantageous grease cutting properties imparted to a similar dishwashing detergent composition when using magnesium ions.

This rejection is traversed and reconsideration is respectfully requested.

The present compositions, defined broadly by independent claim 12, are set forth in detail *supra*. As previously argued *supra* with respect to Ofosu, the instant inventive compositions comprise water, magnesium ions and both branched and linear AAS's in specified proportions

as required by claim 12, and not merely the presence of AAS's. Neither Ofosu nor Surutzidis teach compositions that require both linear and branched AAS's in specific proportions.

The Examiner's contention that the combination is suggested because both Ofosu and Surutzidis are directed to "similar dishwashing detergents" is both incorrect and inapposite. It is incorrect because Ofosu is directed to high-sudsing liquid hand-washing detergents, while Surutzidis is directed to low-sudsing detergents, suitable for applications such as machine washing and other operations requiring low sudsing or "where suds control is of importance." It is inapposite because the combination itself fails to teach or suggest all the present claim limitations.

To establish prima facie obviousness of the claimed invention, all the claim limitations must be taught or suggested by the prior art, *In re Royka*, 490 F.2d at 981, 180 U.S.P.Q. at 580. It is error to find obviousness where references diverge from and teach away from the invention at hand. *In re Fine*, 5 U.S.P.Q.2d at 1599. Since neither reference teaches or suggests both linear and branched AAS's in specified proportions, the combination does not render the present invention obvious. Further, since the primary reference is directed to composition ingredients which inhibit sudsing, while the secondary reference is directed to compositions which promote sudsing, a combination motivated by similar purpose is not suggested. Hence, the present inventive compositions are nonobvious over Surutzidis in view of Ofosu and the rejection under 35 USC 103(a) of claims 12 - 20 is overcome. Reconsideration is respectfully requested.

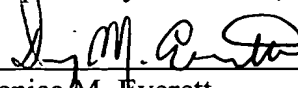
Claims 12-18 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of U.S. Patent No. 5,698,505 to Ofosu. The Examiner asserts that although the claims are not identical, they are not patentably

distinct from each other because claims 1-6 of '505 in combination with WO 95/00117 (Surutzidis) encompass the material limitations of the instant claims.

This rejection is traversed and reconsideration is respectfully requested. As argued *supra*, there is no teaching or suggestion in either Ofosu or Surutzidis to combine the references, and there is no motivation inherent to the detergent arts. In fact, Ofosu and Surutzidis are directed to the diametrically opposed purposes of providing high sudsing versus low sudsing compositions respectively. This difference in purpose is all the more salient in light of the teachings by Surutzidis that utilizing the branched conformation of certain anionic surfactants influences sudsing characteristics in the claimed compositions. Additionally, and most significantly, even the combination of Ofosu and Surutzidis fails to teach all the material limitations of the present inventive compositions. Specifically, the combination fails to teach compositions comprising both linear and branched AAS's in specified proportions. Hence, the present inventive compositions are not rendered obvious by the combination and the rejection of claims 12-18 under the nonstatutory obviousness-type double patenting basis is overcome. Reconsideration is respectfully requested.

It is believed that the above represents a complete response to the Examiner's rejections under 35 U.S.C. § 103, and nonstatutory double patenting and places the present application in condition for allowance. Reconsideration and an early allowance are requested.

Respectfully submitted,



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Serial No. 09/341,979
Response filed September 8, 2003
Reply to Office Action dated May 7, 2003

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Serial No. 09/341,979
Response filed September 8, 2003
Reply to Office Action dated May 7, 2003